

MAKE-UP FRESH AIR FAN

RS Series





CATALOGUE ID: ETC-RS-2023-EDUSV0 NOVEMBER 2023

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MAKE-UP FRESH AIR FAN

RS Series

OVERVIEW

Twin City RS Make-Up Air Fan a roof mounted centrifugal supply fan designed to provide filtered outside air to buildings such as manufacturing plants, warehouses, and auditoriums. The RS fan supplies fresh make-up air to replace the air lost through industrial processes, fume hood exhaust, or general building ventilation.

The unit is a self- contained, completely weatherproof filtered supply fan package. This package includes an arrangement of double width forward curved fan, motor base, V-belt drive in case of belt driven fan, and filters all enclosed in a louvered GI hood with GI top cap.

TYPICAL APPLICATIONS INCLUDE

Commercial kitchens, chemical laboratories, electrical control rooms and anywhere gas equipment is installed. Proper make-up air provisions should be part of every building plan.

> (Direct Drive Units)

Available in 4 sizes, 7.0" to 12.0"

> (Belt Drive Units)

Available in 5 sizes, 10.0" to 20.0"

CONFIGURATIONS

Bottom and Side discharge, Direct Drive and Belt Driven Configurations



WHEEL TYPES

Forward and Backward centrifugal wheel

OPTIONAL CONSTRUCTION

Special Coatings, Aluminum Housing, STL louver

MOTOR SELECTION

Both direct drive and belt drive models are available with a wide range of voltages and enclosures. Standard belt drive TEFC selected using a conservative portion of the IEC/NEMA service factor. Standard direct drive TEAO motors have Class B/F insulation and internal thermal overload protection. Each size is carefully engineered to match the motor to the wheel capacity.

CERTIFICATIONS

AMCA Sound & Air Performance, CE (IEC60335) EMC & RoHS



Twin City Fan & Blower certifies that the Models RS shown herein are licensed to bear the AMCA Seal. The ratings shown are based on tests and procedures performed in accordance with AMCA Publication 211 and AMCA Publication 311 and comply with the requirements of the AMCA Certified Ratings Program.

Low Voltage Directive



IEC 60335-2-80:2015 in conjunction with IEC 60335-1:2010, COR1:2010, COR2:2011, AMD1:2013, AMD2:2016.

EMC Directive

EN 55014-1: 2017+A11: 2020; EN IEC 61000-3-2: 2019;EN 61000-3-3: 2013+A1:2019; EN 55014-2: 2015(IEC 61000-4-2; IEC 61000-4-4; IEC 61000-4-5; IEC 61000-4-6; IEC 61000-4-11).



RoHS Directive Restriction of Hazardous substances in Electrical and Electronic Equipments.

WASHABLE FILTERS

The filter media is washable aluminum available with a 1" or 2" inch thickness.

EASY INSTALLATION

The base/curb cap is free of protruding fasteners which would interfere with installation onto the curb.

INTERNAL WIRING

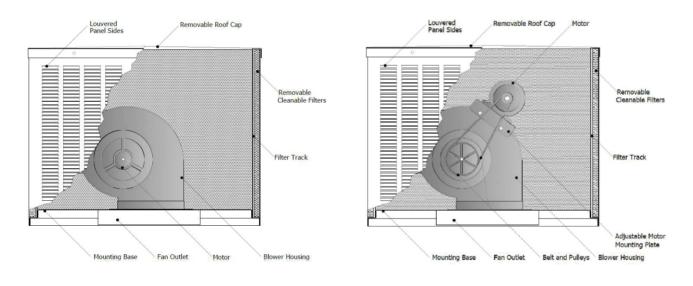
TEFC/TEAO motors are factory-wired between the motor and junction box. For either direct drive or belt drive models, an electric disconnect is available.

EASY MAINTENANCE ACCESS

A full-size cover is easily removed, providing clear

STRUCTURAL INTEGRITY

The galvanized housing provides a high degree of rigidity and weather protection by bending and overlapping all seams. Additional angle reinforcement is provided along the interior base, providing stiffness to the walls and support of the unit on the curb.



DIRECT DRIVE

BELT DRIVE

HOUSINGS

Designed to provide unrestricted air flow and maximum weather protection. Housing style is louvered constructed of heavy gauge galvanized steel.

Features a double-width forward/backward curved wheel for high efficiency and low sound.

STEEL WHEEL - DOUBLE-WIDTH BACKWARD & FORWARD-CURVED

Constructed of heavy gauge galvanized steel, the fan sheave and bearings within the airstream.

BEARINGS AND BEARING SUPPORTS

Fans are designed with pre-lubricated pillow block bearings which provide a minimum life of 200,000 hours (L-50) at maximum cataloged speed. These bearings are mounted to a heavy duty steel support structure to ensure strength and rigidity.

DRIVES AND BELTS

Pulleys are pre-set to the specified RPM. Cast iron variable pitch pulleys are adjustable, allowing for field balancing based on actual field conditions. All pulleys are sized for at least 150% of the driven horsepower. Motors can be adjusted to maintain proper belt tension.

FILTERS

Filters are 1" or 2" aluminum mesh and are easily removed for washing.

FILTER CHANNELS

Formed filter channels securely hold filters in place and provide easy removal from inside.

MOTORS

A variety of single and three phase motors are available in TEFC and TEAO.

MOTOR SLIDE BASE (BELT DRIVEN)

Motor slide bases provide positive slide adjustment for proper belt tension. Turning jack screws force the motor to slide laterally in slots until proper tension is achieved.

SHAFT

Shafts are turned, ground and polished cold rolled steelaccurately sized for the proper bearing size.

The shafts are extended at both ends for flexibility in mounting V-belt drives.

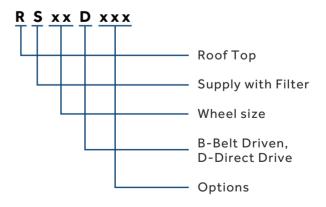
BLOWER HOUSINGS

Fan housings are constructed of galvanized steel. The side sheets are fastened to the scroll housing with an airtight lock seam connection.

TOP CAP

Fully weather tight top cap provides complete protection and easy removal for maintenance and service. Low profile cover is pitched to assure weather runoff.

ORDER CODE



> RS WITH SAND TRAP LOUVER CONSTRUCTION

CONSTRUCTION FEATURES

STL louvered Housing constructed of aluminum profile framing and heavy alloy blade extrusions with pressure die cast aluminum corners. Low profile cover is pitched to ensure water runoff. Roof cur cap shall be GI steel sheet with support structure with reusable 1 or 2 inch aluminum filters.

The STL louver consist of two rows of interlocking vertical blades that catches up to 93% of sand and dust, where it drops down on to emptying holes or sloped sill then ejected through the louver face by gravity.

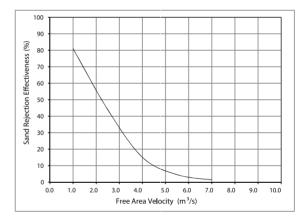




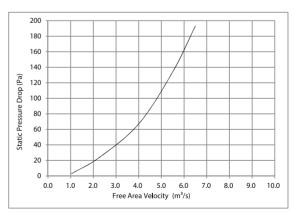


"Twin City Fan & Blower certifies that the STL-A04 shown herein is licensed to bear the AMCA Seal. The ratings shown are based on tests and procedures performed in accordance with AMCA Publication 511 and comply with the requirements of AMCA Certified Ratings Program. The AMCA Certified Ratings Sea applies to wind driven sand and air performance ratings only".

SAND REJECTION EFFECTIVENESS



AIR FLOW RESISTANCE



RS – ROOF SUPPLY SERIES



Backdraft Damper

Backdraft Damper, with automatic or motorized operation, features a felt seal on the edge of the damper blades for quiet operation. Damper frames are constructed of steel and blades are constructed of aluminum.



Disconnect Switch

NEMA 1 type disconnect switch mounted in the motor compartment when ODP or TEFC motors used. When explosion proof motors are specified, a NEMA7/9 disconnect switch will be shipped loose for field mounting and wiring.



NEMA 4 Disconnect Switch

NEMA 4 disconnect switch (optional) is mounted externally and is water and dust-tight. Switch is available shipped loose for field mounting and wiring or factory mounted and wired.

Variable Speed Control

Variable Speed Control is an optional accessory; allow the adjustment of airflow for system balancing. Variable speed controllers are solid-state design, Variable speed controls can be shipped separately.



Vari-Speed

NEMA 3R Disconnect Switch

NEMA 3R rain-tight disconnect switch, externally mounted when ODP or TEFC motors are used. NEMA 3R, rain proof, disconnects are available shipped loose for field mounting and wiring or factory mounted and wired.



NEMA 7/9 disconnect switches are provided on fan with explosion proof motors. The NEMA7/9 switch is designed for use with fans operating in hazardous environments. NEMA 7/9 disconnects will be shipped loose for field mounting and wiring.



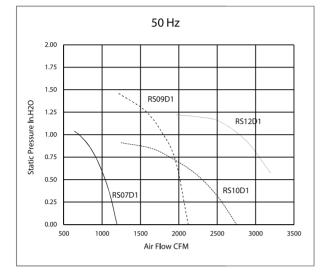


Straight-Sided Roof Curbs

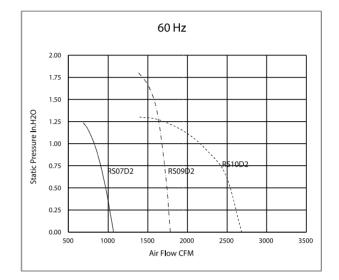
Roof Curb Constructed of galvanized steel with continuous, wide base plate (flashing) to insure watertight seal to roof, lined with 11/2" fiberglass fire-resistant, sound-absorbing insulation.

OTHER ACCESSORIES/OPTIONS:

- Special Coatings
- Stainless Steel Construction
- > Pleated and Panel Filters
- > Stainless Steel Hardware/Accessories

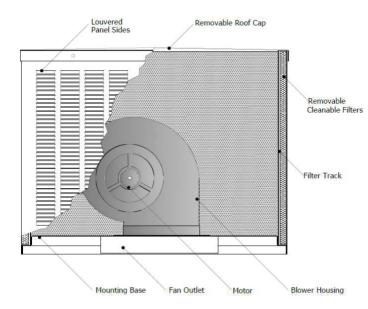


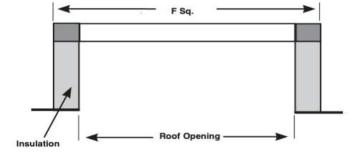
> 230V 1 ~ - IP55 - 50/60Hz

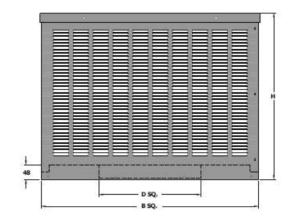


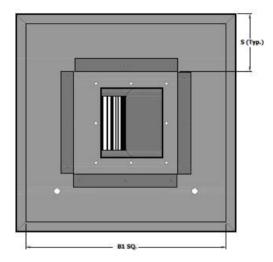
				0.00" Pst	0.25"Pst	0.37" Pst	0.50" Pst	0.75" Pst	1.00" Pst	1.25" Pst	1.50" Pst	
Hz	кw	Α	RPM	CFM	СҒМ	CFM	CFM	СҒМ	CFM	CFM	CFM	
				Sones	Sones	Sones	Sones	Sones	Sones	Sones	Sones	
RS07D1	0.20	2.0	1350	1195	1125	1089	1035	911	699	-	-	
K307D1	0.20	2.0	1550	12.7	12.7	11.2	11.2	10.0	10.0	-	-	
RS07D2	0.20	2.0	1575	1068	1018	993	968	901	819	506	-	
K307D2	0.20	2.0	1575	11.2	11.2	11.2	10.2	10.2	10.6	10.6	-	
RS09D1	0.55	4.6	1375	2123	2065	2036	2006	1934	1793	1575	548	
K309D1	0.55	4.0	1575	19.4	19.4	18.2	18.2	18.2	18.2	14.7	12.1	
RS09D2	0.55	4.6	1650	1784	1762	1751	1740	1709	1673	1636	1565	
R309D2	0.55	4.0	1650	1650	16.6	16.6	16.6	16.6	16.6	16.6	16.6	16.6
RS10D1	0.51	3.8	1000	2754	2556	2436	2294	1877	-	-	-	
KSIODI	0.51	5.0		1000	19.1	19.1	19.1	19.1	15.1	-	-	-
RS10D2	0.51	4.5	1100	2685	2607	2569	2530	2392	2145	1686	-	
K310D2	0.51	4.5	1100	18.7	18.7	18.7	18.7	17.1	17.1	14.8	-	
RS12D1	0 735	5 7	915	-	-	-	-	3028	2737	942	-	
N312D1	0.735 5.	5.5	515	-	-	-	-	16.1	14.5	13.1	-	

> DIMENSIONAL DATA









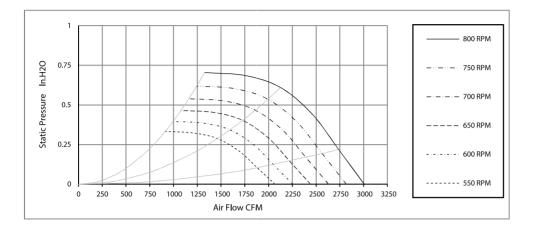
MODEL	B Sq.	B1 Sq.	D Sq.	н	S	F Sq.	RO Sq.	KG
RS07D	710	655	400	550	155	700	600	37
RS09D	710	655	400	550	155	700	600	41
RS10D	930	870	700	700	113	920	820	71
RS12D	930	870	700	700	113	920	820	76

> Notes:

All dimensions are in mm unless otherwise noted. Dimensions are not to be used for construction.

RS – ROOF SUPPLY SERIES

➤ RS10B



Max. Motor Frame Size
90
Maximum RPM
850
Wheel Diameter
250
Max HP
1.0
Outlet Area
700 x 700
Fan Weight Kg
68

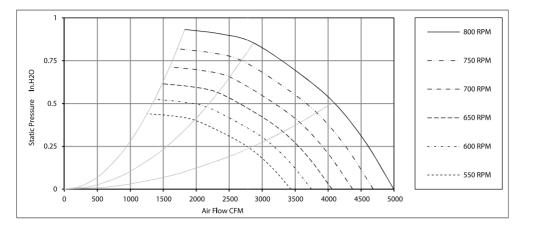
Motor	Fan	0.000	" Pst	0.125	" Pst	0.250	" Pst	0.375	" Pst	0.500	" Pst	0.625	" Pst
	2214	CF	м	СҒМ		CF	м	CF	м	CFM		CFM	
HP	RPM	Sones	внр										
	550	20	67	1843		15	73	-		-		-	
1/2	550	10.5	0.29	10.5	0.25	6.9	0.19	-	-	-	-	-	-
1/2	600	2255		2050		1842		1386		-		-	
	000	12.0	0.38	10.7	0.33	7.9	0.28	6.1	0.18	-	-	-	-
	650	2443		2254		20	62	17	95	-		-	
3/4	050	13.5	0.48	12.2	0.43	12.2	0.37	9.0	0.30	-	-	-	-
574	700	26	31	2455		2278		2070		1676		-	
	700	15.2	0.60	13.6	0.54	13.6	0.49	10.1	0.42	7.8	0.30	-	-
	750	28	19	26	55	24	90	23	23	2070		-	
1	750	16.8	0.74	15.2	0.68	15.2	0.62	15.2	0.55	11.2	0.46	-	-
	800	30	07	28	53	26	99	2543		2346		2053	
	000	18.6	0.90	18.6	0.83	16.8	0.77	16.8	0.70	16.8	0.62	12.4	0.50

MOTOR WEIGHT

НР	1/2	3/4	1	1 1/2
KG	9.5	12.5	14.5	19.5

RS – ROOF SUPPLY SERIES

> RS12B





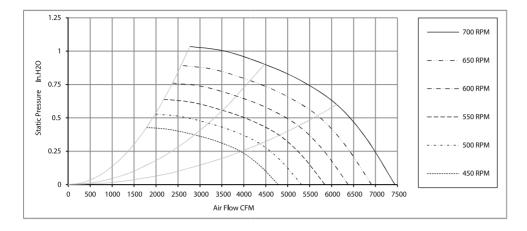
Motor	Fan	0.000'	' Pst	0.125′	' Pst	0.250" Pst		0.375'	' Pst	0.500′	' Pst	0.625′	' Pst	0.750" Pst		0.875" Pst	
НР	RPM	CF	м	СГМ		СҒМ		СҒМ		СҒМ		СҒМ		СҒМ		RPM	
HP	КРМ	Sones	внр	Sones	внр	Sones	внр	Sones	внр	Sones	внр	Sones	внр	Sones	внр	Sones	внр
1	550	343	5	3150		2762		213	2136		-			-		-	
1	550	14.1	0.69	11.0	0.60	11.0	0.49	7.1	0.33	-	-	-	-	-	-	-	-
600	3747		3486		3161		2692		1907		-		-		-		
	16.1	0.89	16.1	0.79	12.6	0.68	8.2	0.53	6.9	0.33	-	-	-	-	-	-	
1 1/2	650	4059		3818		3536		316	55	263	9	-		-		-	
	050	18.2	1.14	18.2	1.03	14.2	0.91	14.2	0.77	9.2	0.58	-	-	-	-	-	-
2	700	437	2	4147		3902		3605		3178		2641		-		-	
L	700	20.4	1.42	20.4	1.30	20.4	1.18	15.9	1.05	15.9	0.86	10.4	0.66	-	-	-	-
	750	468	34	447	5	426	3	3986		3650		3216		2693		-	
3	, 30	22.6	1.99	22.6	1.74	22.6	1.50	22.6	1.35	17.7	1.18	17.7	0.97	11.5	0.76	-	-
	800	499	96	480	0	460)4	4359		4099		3719		3278		2740	
	000	25	2.12	25	1.98	25	1.85	25	1.71	19.5	1.56	19.5	1.33	19.5	1.10	12.8	0.85

MOTOR WEIGHT

НР	1	1 1/2	2	3
KG	14.5	19.5	23.0	31.5

RS – ROOF SUPPLY SERIES

> RS15B





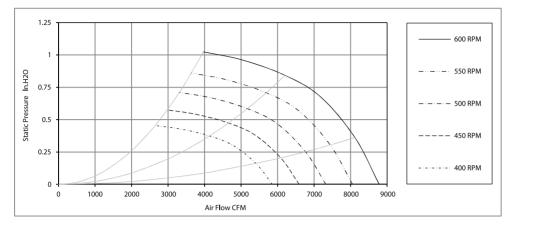
Motor	Fan	0.000'	' Pst	0.125" Pst		0.250" Pst 0.375" Ps		" Pst	0.500" Pst		0.625′	" Pst	0.750" Pst		1.000" Pst		
НР	RPM	СГМ		СҒМ		СГМ		CF	м	CF	м	CF	м	CF	м	RPM	
HP	крм	Sones	внр	Sones	внр	Sones	внр	Sones	внр	Sones	внр	Sones	внр	Sones	внр	Sones	внр
1	450	4784		4417		3916		2842		-		-		-		-	
1	450	13.9	0.87	13.9	0.76	10.7	0.63	7.2	0.38	-	-	-	-	-	-	-	-
1 1/2	5315		.5	4986 4577		3929 2684		-		-		-					
11/2 500	16.2	1.19	16.2	1.08	12.6	0.94	8.5	0.74	6.2	0.42	-	-	-	-	-	-	
2	550	5847		5547		5212		477	77	400)2	258	88	-		-	
۷	550	18.7	1.59	18.7	1.46	18.7	1.32	14.6	1.15	9.8	0.87	7.2	0.47	-	-	-	-
	600	6378		6103		5829		5447		4927		4130		2660		-	
3	000	21.4	2.06	21.4	1.92	21.4	1.78	16.6	1.60	11.2	1.36	11.2	1.04	8.3	0.57	-	-
0	650	691	0	665	6	640)3	608	36	573	0	515	51	435	4	-	
	000	24.1	2.62	24.1	2.47	24.1	2.32	24.1	2.14	18.8	1.94	18.8	1.64	12.7	1.27	-	-
4	700	744	1	720	06	697	0	671	13	638	32	600	01	543	3	357	5
4 70		27	3.28	27	3.11	27	2.95	27	2.77	27	2.56	21	2.31	21	1.98	10.5	1.07

MOTOR WEIGHT

НР	1	1 1/2	2	3	4
KG	14.5	19.5	23.0	31.5	35.5

RS – ROOF SUPPLY SERIES

> RS18B



Max. Motor Frame Size
112
Maximum RPM
650
Wheel Diameter
450
Max HP
5.0
Outlet Area
790 x 790
Fan Weight Kg
134

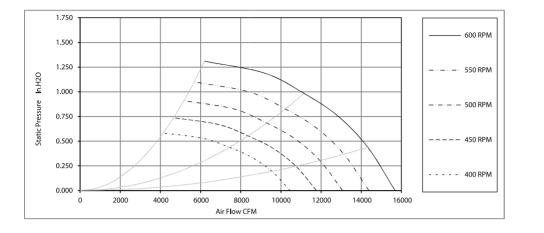
Motor	Fan	0.000'	" Pst	0.125" Pst		0.250" Pst 0.375" Pst		0.500" Pst		0.625	" Pst	0.750" Pst		1.000" Pst			
НР	RPM	CFM		СГМ		СҒМ		СҒМ		СҒМ		СҒМ		СҒМ		RPM	
HP	крм	Sones	внр	Sones	внр	Sones	внр	Sones	внр	Sones	внр	Sones	внр	Sones	внр	Sones	внр
11/2	400	5858		5512		5013		4129		-		-		-		-	
1 1/2	400	14.0	0.99	11.9	0.89	11.9	0.76	7.6	0.57	-	-	-	-	-	-	-	-
2	2 450	6590		6283 590)5	5406		4312		-		-		-		
۷	450	16.8	1.42	14.3	1.30	14.3	1.17	9.2	1.01	6.9	0.73	-	-	-	-	-	-
	500	7322		7046		6769		6322		5771		4700		-		-	
3	500	19.7	1.94	19.7	1.81	16.7	1.68	16.7	1.51	10.8	1.31	8.2	0.98	-	-	-	-
5	550	805	54	780)3	755	52	721	12	6804		6220		5237		-	
	550	22.8	2.58	22.8	2.44	19.3	2.30	19.3	2.13	19.3	1.94	12.5	1.70	12.5	1.33	-	-
4	600	878	37	855	6	832	26	808	31	770)7	733	33	674	9	437	1
4 6	000	26	3.36	26	3.20	26	3.04	22	2.88	22	2.67	22	2.47	14.3	2.18	11	1.22

MOTOR WEIGHT

НР	1 1/2	2	3	4
KG	19.5	23.0	31.5	35.5

RS – ROOF SUPPLY SERIES

> RS20B





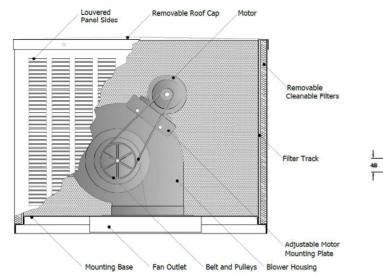
Motor	Fan	0.000'	" Pst	0.125	" Pst	0.250	' Pst	0.375	" Pst	0.500" Pst		0.625" Pst		1.000" Pst		1.2500" Pst		
НР	RPM	СГМ		м	СҒМ		СҒМ		СҒМ		СҒМ		СГМ		СГМ		RPM	
nr		Sones	внр	Sones	внр	Sones	внр	Sones	внр	Sones	внр	Sones	внр	Sones	внр	Sones	внр	
3	400	10456		9875 9160		8123 653		5	-		-		-					
5	400	19.8	2.53	16.8	2.32	16.8	2.06	12.1	1.71	8.7	1.24	-	-	-	-	-	-	
5	450	11763		112	11246 10721		9938 8		888	39	7452		-		-			
5		23.6	3.60	23.6	3.36	20.1	3.12	20.1	2.77	14.4	2.33	10.4	1.80	-	-	-	-	
	500	13069 12605		05	12140		11538		108	33	9808		-		-			
7 1/2	500	27.6	4.93	27.6	4.67	23.5	4.41	23.5	4.07	16.8	3.68	12.3	3.16	-	-	-	-	
/ 1/2	550	143	76	139	54	135	31	130	95	124	55	118	14	840)1	-		
	550	31.8	6.57	31.8	6.28	27.2	5.99	27.2	5.69	27.2	5.26	19.3	4.83	14.2	2.94	-	-	
10	600	156	83	152	96	149	09	145	22	140	34	134	46	109	99	780	0	
10	000	36	8.52	36	8.21	36	7.89	36	7.58	31	7.19	31	6.72	22	4.91	16.2	3.1	

MOTOR WEIGHT

НР	3	5	7 /12	10
KG	31.5	44.0	66.0	74.0

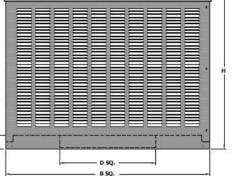
RS – ROOF SUPPLY SERIES

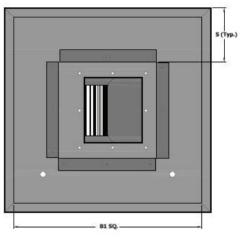
> DIMENSIONAL DATA



F Sq.

Roof Opening -





MODEL	B Sq.	B1 Sq.	D Sq.	н	S	F Sq.	RO Sq.
RS10B	930	870	700	700	113	920	820
RS12B	930	870	700	700	113	920	820
RS15B	1130	1075	790	900	170	1120	1020
RS18B	1130	1075	790	900	170	1120	1020
RS20B	1500	1440	895	1200	304	1490	1390

> Notes:

Insulation

All dimensions are in mm unless otherwise noted. Dimensions are not to be used for construction.

PERFORMANCE

Fans shall be tested in accordance with AMCA 210 and AMCA 300 test codes for air moving devices and shall be guaranteed by the manufa turer to deliver rated published performance levels. Fans shall be licensed to bear the AMCA certified ratings seal for both sound and air.

CONSTRUCTION

Louvered Housing shall be constructed of GI steel sheet. Low profile cover is pitched to ensure water runoff. Roof curb cap shall be GI steel sheet with support structure and fan constructed of steel. All units shall be equipped with re-usable 1 or 2 inch aluminum filters.

WHEELS

All fan wheels shall have wheel cones or shrouds, providing stable flow and high rigidity. Wheels shall be of the forward/backward curved, all wheels shall be statically and dynamically balanced. The complete fan assembly shall be test balanced at the operating speed prior to shipment.

FINISH AND COATING

STD housing fans shall have galvanized housings. STL louvered housing and structural framing shall be constructed of aluminum.

FACTORY RUN TEST

All fans prior to shipment shall be completely assembled and test run as a unit at operatingspeed or maximum RPM allowed for the particular construction type. Each wheel shall be statically and dynamically balanced in acco dance with ISO1940 G 2.5 or 6.3 "Balance Quality and Vibration Levels for Fans"

WARANTEE

The manufacturer shall guarantee the workmanship and materials for at least one (1) year from startup or eighteen (18) months from shipment whichever occurs first.





INDUSTRIAL PROCESS AND COMMERCIAL VENTILATION SYSTEMS

CENTRIFUGAL FANS | UTILITY SETS | PLENUM & PLUG FANS | INLINE CENTRIFUGAL FANS MIXED FLOW FANS | TUBEAXIAL & VANEAXIAL FANS | PROPELLER WALL FANS | PROPELLER ROOF VENTILATORS CENTRIFUGAL ROOF & WALL EXHAUSTERS | CEILING VENTILATORS | GRAVITY VENTILATORS | DUCT BLOWERS RADIAL BLADED FANS | RADIAL TIP FANS | HIGH EFFICIENCY INDUSTRIAL FANS | PRESSURE BLOWERS LABORATORY EXHAUST FANS | FILTERED SUPPLY FANS | MANCOOLERS | FIBERGLASS FANS | CUSTOM FANS



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